Refer to: Owsley JQ Jr: Camouflage and the augmentation mammaplasty. West J Med 120:101-104, Feb 1974

Augmentation mammaplasty has become a safe and accepted surgical procedure since the introduction of silicone prosthesis. Proper selection of the type and size of the implant and careful attention to making the line of incision as nearly invisible as possible are important for a natural-appearing breast. Placement of a silicone gel filled prosthetic implant through a periareolar incision achieves excellent contour and consistency in the augmented breast, with an essentially invisible scar.

Camouflage and the Augmentation Mammaplasty

JOHN Q. OWSLEY, JR., MD
San Francisco

THE IDEAL GOAL of a breast augmentation operation is to insert an adequate volume of inert augmenting material without leaving telltale signs of the surgical intervention. The first satisfactory augmenting material became available in the late 1950's, when medical grade silicones were introduced.[1]

For a time, injection of liquid silicone, a method of augmenting breast size without creating surgical scars, was greatly publicized in the popular news media. Unfortunately, significant complications occurred after these injections. Because the long term effects of injecting silicone fluid into the subcutaneous tissues have not been determined, the Federal Food and Drug Administration has ruled that liquid silicone should not be injected into the female breast. The only acceptable alternative breast augmentation requires a surgical incision so that a silicone prosthetic implant can be inserted into the retromammary space to provide the desirable volume and contour.

A silicone implant for this purpose designed by Cronin and developed by the Dow Corning Company in 1964 has proved to be a safe and cosmetically satisfactory prosthetic implant.[2] More than 50,000 pairs of these implants have been used,[3] which certainly suggests that women other than exotic dancers are requesting such operations. The most recent Congress of the American College of Surgeons in San Francisco had five exhibits devoted to augmentation mammaplasty, reflecting the increasing interest of surgeons in this operation.

What kind of women ask for augmentation mammaplasty? Early psychological studies of patients undergoing breast augmentation warned of possible problems in feminine identification and perhaps even more profound psychological disorders.[4,5] Although some of these women are indeed suffering from psychological disturbances, most of the patients who are requesting breast augmentation operations are well adjusted single or married women. The typical patient expresses anxiety and frustration about her lack of breast development and her disproportionately shaped body.

Consider, in this context, the tremendous psychological impact of the women's fashion industry. The latest Paris collections are quickly copied, mass produced and stocked by American department stores. Unfortunately, for the woman whose breasts are unusually small it is difficult to find

From the Department of Surgery, University of California, San Francisco.
Submitted March 22, 1973.
Reprint requests to: J. Q. Owsley, Jr., MD, 45 Castro Street, San Francisco, CA 94114.

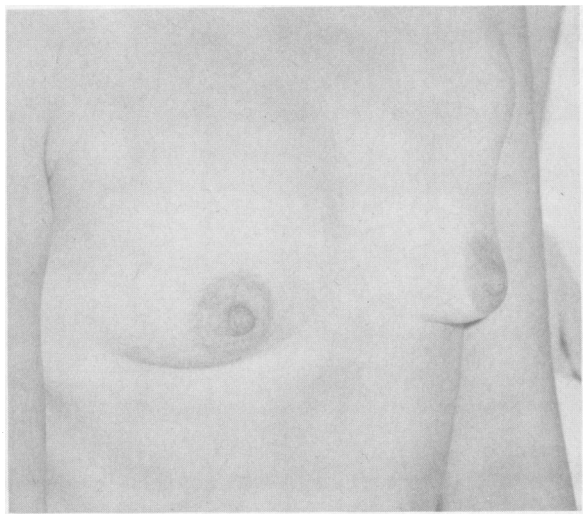

Figure 1.—Appearance of typical patient requesting augmentation mammaplasty.

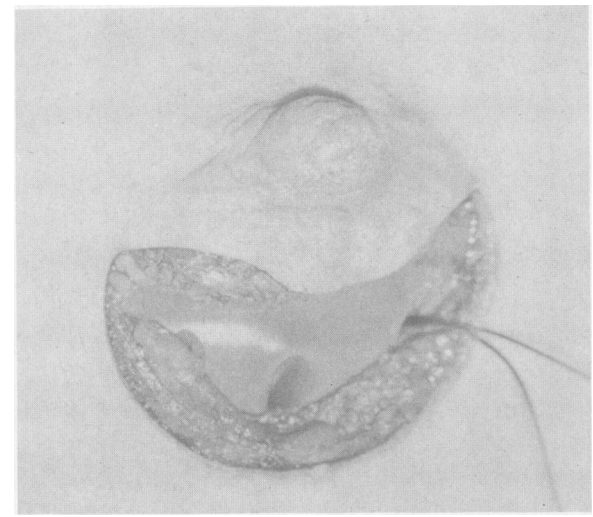

Figure 2.—Silicone implant has been placed through a periareolar incision. Removable suture aids in orientation of the placement.

the right size in ready-to-wear clothing. A dress that fits well around the hips is too loose around the bust. The frustration associated with finding a suitable fit often forces her into unfashionable styles, so that, for example, instead of a bikini the unhappy shopper is forced to settle for a less attractive one-piece bathing suit.

Plastic surgeons throughout the world have found that the augmentation mammaplasty operation gives generally good results.[6] Since the introduction of the Cronin prosthetic implants, numerous modifications have been made in the implant materials, including variations of the shape of the capsule and consistency of the contained silicone fluid.[7] Various types of inflatable implants enjoyed some popularity,[8] but they are less commonly used now because of late collapse of the implant that has been observed following leakage and absorption of the filling fluid. In some series three-fourths of patients who had such implants had complications of this kind.[9]

The submammary fold incision has been the customary surgical approach, but it leaves a visible scar which, no matter how fine, is a telltale clue to the operation and a source of concern to the patient. To minimize the scar, small and medium sized silicone filled implants have been placed through a submammary incision only four to five centimeters long. This is accomplished by gentle digital manipulation to gradually squeeze the implant through a keyhole opening into the prepared retromammary space. Patients are gratified to find that they have so small a scar.

An alternative periareolar incision is now proposed for insertion of the standard pre-filled silicone breast implant. A periareolar incision has long been the preferred approach for surgical correction of gynecomastia in males. Made, as it is, at the edge of the contrasting color between the pigmented areola and the surrounding skin, the junctional incision is difficult to detect when the scar has matured. This incision has been advocated for women also, but for the insertion of inflatable breast implants which can be easily introduced through the small opening in a collapsed state, and then filled in situ.[10] However, since inflatable implants are prone to complications, this surgical incision has not been widely used for augmentation mammaplasty. Insertion of the silicone-filled implant through an inconspicuous periareolar incision would appear to achieve our goal of camouflaging the site of incision.

The typical female areola varies in size but in its relaxed state it is seldom less than 3 centimeters in diameter. If a circumareolar incision is made around half the circumference of a 3-centimeter areola, the wound is a minimum of 4.5 centimeters long. Traction on this incision creates an access which has proved to be entirely adequate for placement of small to moderate sized implants. In almost all patients the smaller sized implants are preferred because of their more natural contour and consistency to palpation.

For many patients the operation can be performed under local anesthesia on an out-patient basis, although some prefer to be admitted to the

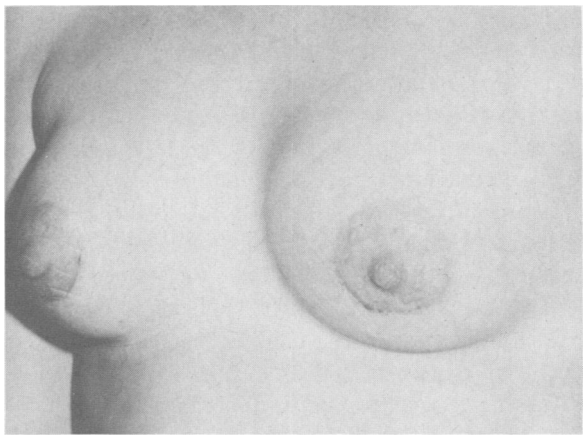

Figure 3.—Same patient as in Figure 1, two weeks after operation.

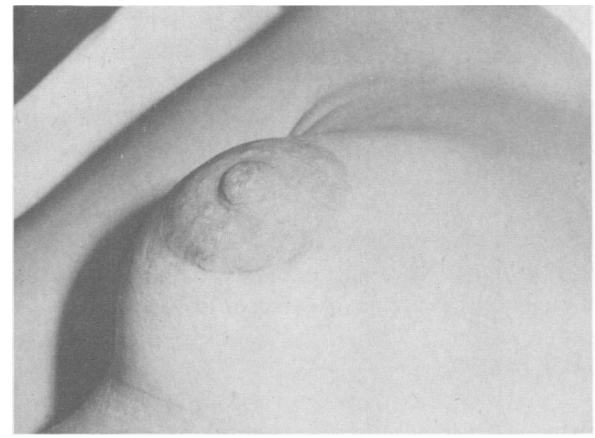

Figure 4.—Same patient three months after operation. Note inconspicuous scar formation.

hospital for operation under general anesthesia. Strict aseptic operating room technique is mandatory. When local anesthesia is used, standard preoperative medications are given. Supplementary intravenous diazepam (Valium®), given just before injection of the local anesthetic, may be useful in apprehensive patients.

When the patient is lying supine on the operating table, the existing breast tissue flattens out. What might appear to be a considerable depth of tissue between the skin and pectoralis muscle when the patient is standing is remarkably reduced. An inferior periareolar incision is made. The skin is undermined inferiorly for 3 or 4 cm, and then the incision is deepened through the breast tissue to identify the fascia overlying the pectoralis muscle. Electrocautery dissection reduces bleeding and helps to identify the tissue planes. The incision is deliberately angled slightly away from the areola to prevent undercutting the nipple and possibly injuring the larger glandular ducts. Dissection of the superior quadrants of the retromammary space is easily accomplished with a few sweeps of the finger in most cases. Below the level of the nipple a combination of sharp and blunt dissection is necessary to free the lower quadrants of the breast. Dissection of the lower retromammary space must be carried completely to the level of the submammary fold. Failure to dissect the lower section adequately can result in improper placement of the implant, which causes abnormal fullness of the superior portion of the breast.

Careful hemostasis is of utmost importance to prevent postoperative hematoma. A retractor with a fiberoptic light source attached is of great help in exploring the extreme recesses of the retromammary space to secure all bleeding vessels. Hematoma contributes to later formation of excessive fibrous tissue and scar contracture around the implant. This can cause undesirable firmness of the breast and may necessitate subsequent surgical revision. Therefore, detection of a significant hematoma in the early postoperative period has an important bearing on the final outcome of the operation. Immediate reexploration of the breast and evacuation of the hematoma may be indicated.

The periareolar incision has other advantages in addition to the improved cosmetic appearance of the scar. The incision is in a central relationship to all directions of the dissection, which improves visibility and facilitates hemostasis. At this level there is less difficulty in identifying the proper plane of dissection along the fascia overlying the pectoralis muscle. When a submammary incision is used, the lower border of the muscle is not always readily identified, which may result in an unnecessarily bloody dissection in or under the muscle. Finally, less stress is exerted upon the periareolar incision than is placed on the inferiorly located submammary wound which carries the maximum weight of the prosthetic implant as the patient resumes erect activity during healing.

I now prefer to use the silicone implants manufactured by the Heyer-Schulte Corporation. They are thin, soft silicone rubber bags which contain the fluid silicone material. The implants are not backed with dacron patches, and do not attach to the chest wall. With an implant of this kind the consistency and appearance of the breast are more natural. The implant is introduced through the incision by manipulation of the fingers while the

wound edges are held apart by standard flat-blade retractors. This maneuver requires patience and gentleness as the bag is manipulated little by little into the cavity and the fluid contents are squeezed inside. On the posterior aspect of the implant there is a loop through which a heavy silk suture can be temporarily passed to aid in orientation of the position of the implant. The final placement of the implant is subsequently maintained in the breast by the surrounding thin fibrous capsule which forms within a few weeks after operation.

The satisfactory contour and near-normal consistency of the augmented breasts are achieved by careful selection of implants of appropriate size. If the implant fits the pocket satisfactorily, no additional fixation is necessary. No local medications are instilled into the cavity nor is any drainage mechanism introduced. Drainage is no substitute for thorough hemostasis. With care taken to assure accurate approximation of the edges of the incision, the breast tissue is sutured in two layers with absorbable sutures. The subcuticular approximation of the skin is followed by a fine running suture of nylon in the epidermis. A supportive dressing is maintained for at least 14 days following operation. Movements of the patients' arms are restricted for two weeks and physical activities, such as tennis and swimming, are prohibited for at least six weeks.

In its retromammary position the silicone implant is soon surrounded by a capsule of smooth, thin, fibrous tissue. In an occasional patient, the scar capsule thickens and contracts, causing excessive firmness of the breast. Hematoma is most likely a contributing cause in this reaction, although it has been speculated that the presence of Dacron fixation patches on the implant may provoke excessive fibrotic reaction in the capsule.[9] While it is difficult to prove this relationship, clinical experience has suggested less frequent occurrence of late capsular contracture when implants not having Dacron backing are used. Cases of capsular contracture are treated by secondary capsulectomy and replacement with implants that are not backed with that material.

Infection, while always a possibility, has been rarely encountered. I have not had occasion to remove a breast implant because of wound infection. Clinical symptoms related to so-called allergic or foreign body reaction to the silicone implants have not been observed.

Since the breast tissue overlies the implant, it is readily available for clinical examination. Cystic masses in the breast tissue have occasionally been observed, and usually have subsided spontaneously, although excisional biopsy of a persistent cystic mass was done in one case. Although a few cases have been reported, I personally have not seen a patient with breast carcinoma occurring after an augmentation mammaplastry.

Patient satisfaction is gratifyingly high after the operation. Although the surgeon may occasionally observe that the breasts are firmer than is ideally desirable, patients rarely express dissatisfaction and are usually delighted with the appearance and contour. Transient alteration in nipple sensation is common following either the submammary or periareolar incisions, though sensitivity and erectile function generally return to normal within a few months. Only one patient in 15 years said she believed she had permanent diminution in nipple sensation, though the nipple is sensitive to pinprick and shows normal erectile properties. In her case the augmentation was done through a submammary incision.

REFERENCES

1. Marzoni FA, Upchurch SE, Lambert CJ: An experimental study of silicone as a soft tissue substitute. Plastic and Reconstructive Surgery, 24:600-608, 1959

2. Cronin TD, Gerow FJ: Augmentation mammaplasty—A new natural feel prosthesis, *In* Transactions of the Third International Congress of Plastic Surgery, Excerpta Medica Foundation, Amsterdam, 1964, pp 41-49

3. Dow Corning: Advertisement. Plast Reconstr Surg 48, 1971

4. Edgerton MT, McClary AF: Augmentation mammaplasty, with special reference to use of the polyvinyl alcohol sponge. Plast Reconstr Surg 21:279-305, 1958

5. Edgerton MD, Meyer E, Jacobson WE: Augmentation mammaplasty—II. Further surgical and psychiatric evaluation. Plast Reconstr Surg 27:279-302, 1961

6. Hoopes JE, Edgerton MT, Shelley W: Organic synthetics for augmentation mammaplasty—The relation to breast cancer. Plast Reconstr Surg 39:263-269, 1967

7. Cronin TD, Greenberg RL: Our experience with the silastic gel breast prosthesis. Plast Reconstr Surg 46:1-7, 1970

8. Tabari KK: Augmentation mammaplasty with simaplast implant. Plast Reconstr Surg 44:468-476, 1969

9. Williams JE: Experiences with a large series of breast implants. Plast Reconstr Surg 48:233-257, 1972

10. Jenny H: Advertising brochure of the Heyer-Schulte Company.